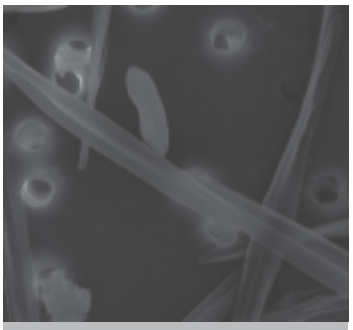
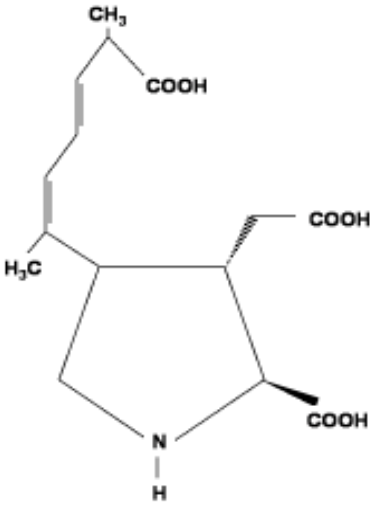


Pseudo-nitzschia spp.

Species Distribution: *Pseudo-nitschia spp,* a genus of diatoms, can be found worldwide. Several species of *Pseudo-nitschia* produce the toxin domoic acid. These toxic species have been found on the Pacific northwest coast from Canada to mid-California and the Atlantic Northeast coast of Canada, as well as the Gulf of Mexico.

Toxins/Mode of Action: Domoic Acid (DA)

Domoic acid is a tricarboxylic acid that acts as a neurotoxin. It binds glutamate receptors, which are involved in memory processing. When these receptors are excessively activated, as occurs with domoic acid, damage to neurons leads to permanent loss of neurological function.



Chemical Structure of DA

Human Health Syndrome: Amnesic Shellfish Poisoning (ASP):

Amnesic shellfish poisoning (ASP) produces gastrointestinal and neurological effects. Mild cases arise within 24 hours of consumption of contaminated shellfish. Symptoms include nausea, vomiting, diarrhea, and abdominal cramps. In more severe cases neurological symptoms occur which include headaches, hallucinations, confusion, short-term memory loss, respiratory difficulty, seizures, coma, and in extreme cases, death.

Other Species Associated with ASP:

- *P. australis*
- *P. delicatissima*
- *P. multiseries*
- *P. pseudodelicatissima*
- *P. pugens*

Syndrome Distribution: ASP was recorded for the first time off the Atlantic coast of Canada in 1987 when three deaths and over 100 confirmed cases of acute intoxications followed the consumption of cultured mussels. Cases were then reported on the northeast and northwest coast of North America. Although no cases of ASP have been reported in the Gulf of Mexico algae that produce domoic acid have been found there.